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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/551,023
Filing Date: September 29, 2005
Appellant(s): GIRALDO ET AL.

Gregory L Thorne
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/25/2008 appealing from the Office action mailed 12/27/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,771,278	Pooley	9-1988
5,652,600	Khormaei et al	7-1997
6,567,171	Rushing	5-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-5, 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iranpour Khormaei (Patent Number: 5,652,600) in view of Applicant's Admitted Prior Art.

As to claims 1, 11, and 12, Khormaei teaches: A display device and method (see column 1 lines 6-8) for driving a display device comprising: a display with a plurality of light emitting elements (see figures 1 & 2 – element 104, column 5 lines 28-32), and data lines (see figure 2 – element 100) for providing pulse width modulation signals to the light emitting elements (see figures 10-13 & column 5 lines 19-21 and column 8 lines 1-8); and means/controller (see figure 2– element 36 and figure 15 – element 306) coupled to the data lines for generating, during time intervals of a frame period, at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the time intervals (see figures 10-13 & column 8 lines 1-8 & 38-55).

Khormaei doesn't directly teach wherein the generating means generates the first and second time intervals in an order that reduces dead times between the time intervals.

Applicant's Admitted Prior Art teaches wherein the generating means/controller generates the first and second time intervals in an order that reduces dead times between the time intervals (see figures 3 & 4, [0005], [0037], [0039]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate generating the first and second time intervals in an order that reduces dead times between the time intervals taught by Applicant's Admitted Prior Art into the display device and method for driving taught by Khormaei in order to more efficiently use the available time in the frame period (see Applicant's Admitted Prior Art - figure 4 & [0039]).

As to claim 2 (dependent on claim 1), Khormaei teaches the display further comprising selection lines, each selection line being coupled to a part of the plurality of light emitting elements, the generating means being further coupled to the selection lines for applying a multiline addressing scheme to the data lines and the selection lines (see figures 8 and 15 and column 8 lines 38-55). Applicant's Admitted Prior Art also teaches the application of multiline addressing (see figures 3 & 4 and [0005], [0037], and [0039]).

As to claims 3 and 13 (dependent on claim 1 and claim 12 respectively), Khormaei teaches wherein the generating means/controller are adapted to generate time intervals of a substantially binary weighted duration wherein each of the time intervals is assigned the substantially binary weighted duration regardless of emission levels during each of the time intervals (see column 6 lines 28-34 & column 8 lines 1-8). Applicant's Admitted Prior Art also teaches wherein the generating means/controller are adapted to generate time intervals of a substantially binary weighted duration wherein

each of the time intervals is assigned the substantially binary weighted duration regardless of emission levels during each of the time intervals (see figures 3 & 4, [0037], [0037]).

As to claims 4 and 14 (dependent on claim 1 and 12), Khormaei teaches wherein the generating means/controller are adapted to generate time intervals of a substantially binary weighted duration regardless of an ordering of the time intervals (see figure 10, column 6 lines 28-34 & column 8 lines 1-8). Applicant's Admitted Prior art also teaches wherein the generating means/controller are adapted to generate time intervals of a substantially binary weighted duration regardless of an ordering of the time intervals (see figures 3 & 4, [0037], [0039]).

As to claim 5 (dependent on claim 1), Khormaei teaches wherein the generating means are adapted to generate the first and second emission level via the data lines in an intermixed mode (see figure 10 and column 8 lines 1-8).

As to claim 9 (dependent on claim 1), Khormaei teaches the generating means are adapted to generate the second emission level at a level substantially equal to the first emission level multiplied by a number of selectable combinations of time intervals (see figures 14,15 & column 8 lines 1-37).

As to claim 10 (dependent on claim 1), Khormaei teaches an electric device comprising a display device according to claim 1 (column 1 lines 36-52 & column 2 lines 54 - column 3 line 14 & column 8 lines 1-37).

2. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iranpour Khormaei (Patent Number: 5,652,600) in view of Applicant's Admitted Prior Art, and further in view of Allen J. Rushing (Patent Number: US 6,567,171 B1).

As to claim 6 (dependent on claim 3), the combination of Khormaei and Applicant's Admitted Prior Art teaches the limitations as described above in the rejection of claims 1 and 3.

The combination of Khormaei and Applicant's Admitted Prior Art do not directly teach the generating means comprising a control unit, and a data driver comprising a first current source for generating the first emission level and a second current source for generating the second emission level.

Rushing teaches the generating means comprising a control unit, and a data driver comprising a first current source for generating the first emission level and a second current source for generating the second emission level (see column 9 lines 36-46 & column 12 lines 18-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the first and second current sources taught by Rushing into the display device taught by the combination of Khormaei and Applicant's

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Admitted Prior Art in order to obtain intensity control within a light emitting display device.

As to claim 7 (dependent on claim 5), the combination of Khormaei and Applicant's Admitted Prior Art teaches the limitations as described above in the rejection of claims 1 and 5. Khormaei also teaches the generating means pre-charging the data lines (see figures 2-6).

The combination of Khormaei and Applicant's Admitted Prior Art do not directly teach coupling one of the current sources to one of the data lines.

Rushing teaches coupling one of the current sources to one of the data lines (see figure 3, column 9 lines 36-46 & column 12 lines 18-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the current sources taught by Rushing into the display device taught by the combination of Khormaei and Applicant's Admitted Prior Art in order to obtain intensity control within a light emitting display device.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iranpour Khormaei (Patent Number: 5,652,600) in view of Applicant's Admitted Prior Art, and further in view of Charles Pooley (Patent Number: US 4,771,278).

As to claim 8 (dependent on claim 1), the combination of Khormaei and Applicant's Admitted Prior Art teaches the limitations as described above in the rejection of claim 1.

The combination of Khormaei and Applicant's Admitted Prior Art does not directly teach a power line for coupling a first supply voltage to the plurality of light emitting elements for generating the first emission level and a second supply voltage for generating the second emission level, respectively.

Pooley teaches a power line for coupling a first supply voltage to the plurality of light emitting elements for generating the first emission level and a second supply voltage for generating the second emission level, respectively (see claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the first and second supply voltages (power supplies) taught by Pooley into the display device taught by the combination of Khormaei and Applicant's Admitted Prior Art in order to supply different voltages to the light emitting elements.

(10) Response to Argument

1. With respect to the rejection under 35 USC 103 as being unpatentable over Khormaei in view of AAPA, to claims 1-5 and 9-14, in the Office Action dated 12/27/2007, Appellant argues that AAPA does not disclose limitations (i) **“the generating means/controller generates the first and second time intervals in an**

order that reduces dead times between the time intervals” and (ii) “a multilevel power addressing scheme wherein during time intervals of a frame period, at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the time intervals”; see page 13 and 17 of the Appeal Brief. Examiner disagrees because as follows:

Regarding the limitation (i) above, since this limitation (i) does not require “the generating means/controller generates the first and second time intervals in a non-sequential order that reduces dead times between the time intervals”, “the generating means/controller generates the first and second time intervals in an order that reduces dead times between the time intervals” as taught by AAPA (see above rejection), considerably corresponds to the claimed limitation above. Appellant admits that figures 3 and 4 of AAPA show the first and second time intervals in a sequential order and that paragraph [0005] of AAPA does state that in MLA scheme, dead times between the subfields are minimized by proper algorithms. Appellant is arguing that only a sequential order is shown, however in the claim language it simply states “an order” and not “a non-sequential order” which is broad and can be interpreted as a sequential order. Further, since it is admitted that in MLA scheme, dead times between the subfields can be minimized by proper algorithms, it is therefore obvious that if one of these known algorithms that minimizes dead times between the subfields is implemented in the generating means/controller, then whatever order that this occurs

including sequential order, reduces dead times, therefore corresponds to the limitation (i).

Regarding the limitation (ii) above, it is noted that the feature upon which applicant relies (i.e., "a multilevel power addressing scheme") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Also, in response to Appellant's argument that "FIGs 3 and 4 do not show a multilevel power addressing scheme wherein during time intervals of a frame period, at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the time intervals", Examiner refers Appellant back to above rejection, where "during time intervals of a frame period, at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the time intervals" is taught by figures 10-13 & column 8 lines 1-8 and 38-55 of Khormaei not figures 3 and 4 of AAPA.

2. With respect to the rejection under 35 USC 103 as being unpatentable over Khormaei in view of AAPA, to claims 1-5 and 9-14, in the Office Action dated 12/27/2007, Appellant argues that Khormaei does not disclose limitations (i) **"at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the**

time intervals"; see page 18 and 19 of the Appeal Brief. Examiner disagrees because as follows:

With regard to the argument that gray levels are enhanced by a factor of '2' instead of only '1' as as taught by Khormaei, Examiner points out that there are no factors inherent from the claimed limitation "at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the time intervals". It is noted that the features upon which applicant relies (i.e., "the individual time intervals SF are in fact used "n" times" in which case "n" is at least "two" and the grey scale levels therefore are enhanced by a factor of "2") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Khormaei does teach "at least a first non-zero emission level of a light emitting element during a first one of the time intervals and a second non-zero emission level during a second one of the time intervals" (see above rejection and note that as broadly interpreted from the claimed language of this limitation - the peaks of the waveforms shown in figures 10-13 are interpreted as non-zero emission levels and multiple time intervals are separated by the dotted lines).

Therefore, claims 1, 11, and 12 are made obvious by the teachings of Khormaei in view of AAPA.

3. With respect to the rejection under 35 USC 103 as being unpatentable over Khormaei in view of AAPA, further in view of Rushing, to claims 6 and 7, in the Office Action dated 12/27/2007, Appellant argues Rushing does nothing to cure the deficiencies in Khormaei in view of AAPA see page 21 of the Appeal Brief. Examiner disagrees. Claims 6 and 7 each depend from claim 1 and accordingly are rejected based at least on the rejection of claim 1. There are also no deficiencies to cure in Khormaei in view of AAPA as described in the above response to arguments and the limitations of claims 6 and 7 are taught by Rushing (see above rejection).

4. With respect to the rejection under 35 USC 103 as being unpatentable over Khormaei in view of AAPA, further in view of Pooley, to claim 8, in the Office Action dated 12/27/2007, Appellant argues Pooley does nothing to cure the deficiencies in Khormaei in view of AAPA see page 22 of the Appeal Brief. Claim 8 depends from claim 1 and accordingly is rejected based at least on the rejection of claim 1. There are also no deficiencies to cure in Khormaei in view of AAPA as described in the above response to arguments and the limitations of claim 8 is taught by Pooley (see above rejection).

Claims 1, 11, and 12 are made obvious by the teachings of Khormaei in view of AAPA. Therefore, claims 2-10 and 13-14 depend from one of these independent claims and accordingly are made obvious for at least this reason.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jennifer Zubajlo/

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3-Aug-08

